4th

5th

6th

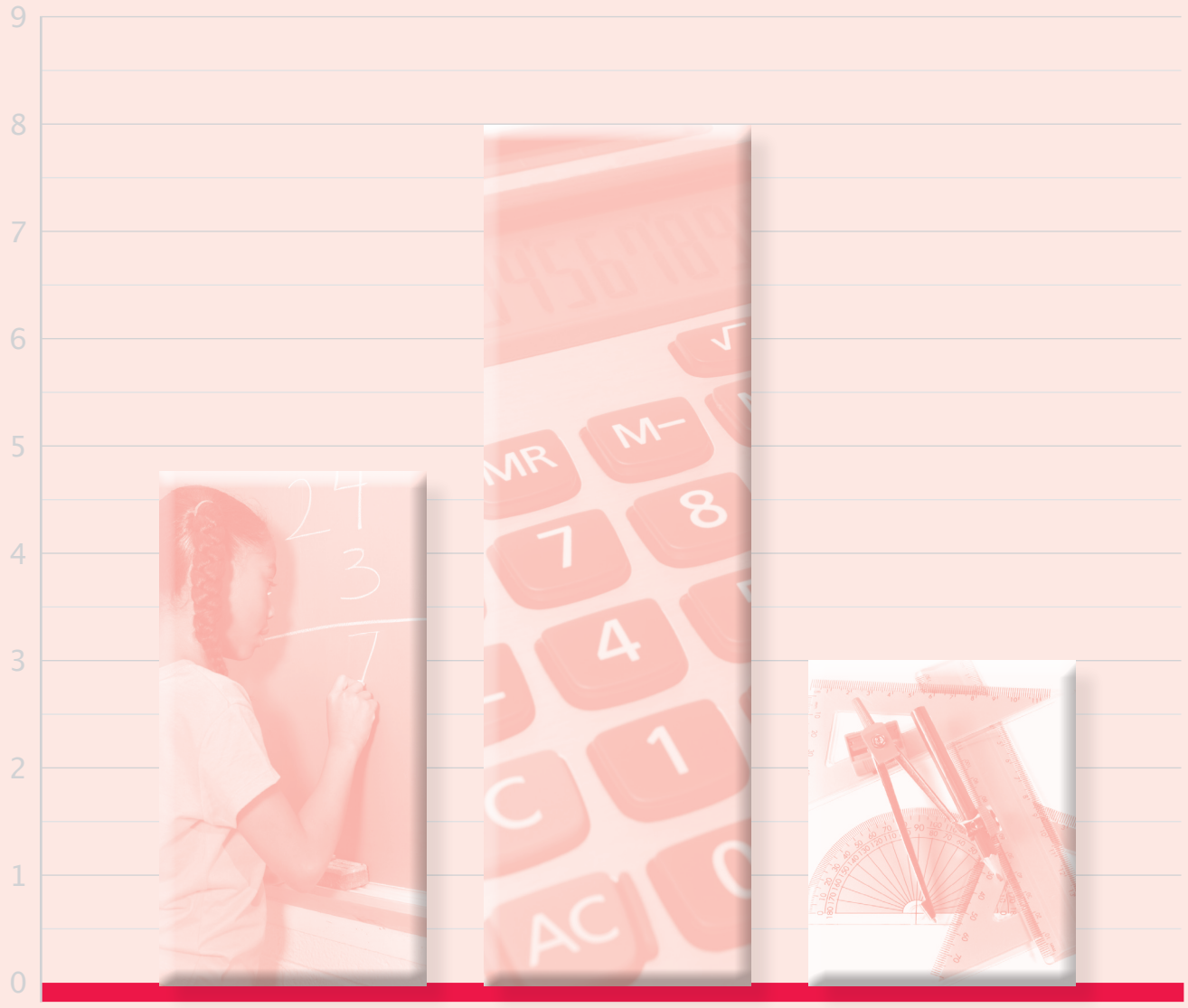
7th

8th

Grade 7

meap™
Michigan Educational Assessment Program

Item Descriptors



MATHEMATICS

FALL 2011

MICHIGAN STATE BOARD OF EDUCATION
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NOTE: For each item listed throughout this booklet, the first statement is a summary of the Michigan Grade Level Content Expectation (GLCE) and the second statement is the descriptor for the item's stem or question.

Students were instructed to read the directions below silently as the test administrator read them aloud.

PART 1

Part 1

DIRECTIONS:

In this part, you will answer multiple-choice mathematics questions. Some questions will ask you to view a picture, chart, or other mathematics-related information. Use that information with what you know to answer the question. You may **NOT** use a calculator for this part of the test.

You must mark all of your answers in Part 1 of your **Answer Document** with a No. 2 pencil. You may underline, highlight, or write in this test booklet to help you, but nothing in this test booklet will be scored. No additional paper may be used.

Mark only one answer for each question. Completely fill in the corresponding circle on your **Answer Document**. If you erase an answer, be sure to erase completely. Remember that if you skip a question in the test booklet, you need to skip the answer space for that question on the **Answer Document**. If you are not sure of an answer, mark your **best** choice.

A sample question is provided for you below.

Sample Multiple-Choice Question:

Marty wants to put 75 CDs into cases. Each case holds exactly 8 CDs. What is the **least** number of cases that Marty will need to hold all his CDs?

A 8

B 9

C 10

D 11

For this sample question, the correct answer is **C**. Circle **C** is filled in for the sample question on your **Answer Document**.

Once you have reached the word **STOP** in your test booklet, do **NOT** go on to the next page. If you finish early, you may go back and check your work in Part 1 of the test **ONLY**. Check to make sure that you have answered every question. Do **NOT** look at any other part of the test.

NOTE: The directions for Part 2 are the same as the above instructions, but with calculators allowed.

1 **N.MR.06.01:** Understand the division of fractions as the inverse of multiplication.

Identify the equivalent expression to the given division expression.

A correct

B $a/b \div c/d = a/b \times c/d$

C $a/b \div c/d = b/a \times d/c$

D $a/b \div c/d = b/a \times c/d$

2 **N.MR.06.01:** Understand the division of fractions as the inverse of multiplication.

Identify the equivalent expression to the given division expression.

A $a/b \div c/d = a/b \times c/d$

B $a/b \div c/d = b/a \times d/c$

C correct

D $a/b \div c/d = b/a \div d/c$

3 **N.FL.06.02:** Write a statement to represent dividing fractions.

Identify the expression that corresponds to the given context.

A subtraction

B addition

C correct

D multiplication

4 **N.FL.06.02:** Write a statement to represent dividing fractions.

Identify the expression that corresponds to the given context.

A correct

B multiplication

C addition

D subtraction

5 **N.MR.06.03:** Solve for the unknown in equations.

Solve for x in an equation, dividing with fractions.

A correct

B incorrect divisor

C incorrect divisor

D reciprocal

6 **N.MR.06.03:** Solve for the unknown in equations.

$(a/b)x = c/d$

A c/a

B multiplied c/d by a/b

C incorrect factor

D correct

7 **N.FL.06.04:** Multiply and divide any two fractions, including mixed numbers.

Mixed number divided by a proper fraction.

A correct

B incorrect quotient

C incorrect quotient

D incorrect quotient

8 **N.FL.06.04:** Multiply and divide any two fractions, including mixed numbers.

Mixed number multiplied by a mixed number.

A multiplied wholes, multiplied fractions, then added

B correct

C added

D incorrect product

9 **N.FL.06.09:** Compute with integers; use a number line and chip models.

-a + -a + -a + -a

A 4/-a

B -4 – a

C 4 + -a

D correct

10 **N.FL.06.09:** Compute with integers; use a number line and chip models.

Translate a number line model to a number sentence.

A incorrect sentence

B correct

C incorrect sentence

D incorrect sentence

11 **N.FL.06.10:** Compute operations with rational numbers.

Add a decimal in thousandths to a decimal in tenths.

A incorrect addition

B added tenths as ten thousandths, i.e., appended

C added tenths as thousandths

D correct

12 **N.FL.06.10:** Compute operations with rational numbers.

Subtract a mixed number from a mixed number.

A incorrect subtraction

B incorrect subtraction

C correct

D incorrect subtraction

13 **N.FL.06.12:** Calculate part of a number, given the percentage and number.

Calculate part of a number, given the percentage and number.

A ab% of xyz = xyz/ab

B correct

C ab% of xyz = xyz – ab

D ab% of xyz = xyz/0.ab

14 **N.FL.06.12:** Calculate part of a number, given the percentage and number.

Calculate part of a number, given the percentage and number.

A half of correct total

B one less than correct total

C correct

D complement

15 **A.FO.06.03:** Use letters with units to represent quantities.

Identify the expression that corresponds to the given context.

A added, incorrect coefficient

B ax – y instead of ay – x

C added instead of subtracted

D correct

16 **A.FO.06.03:** Use letters with units to represent quantities.

Identify the expression that corresponds to the given context.

A correct

B multiplied

C added

D subtracted

17 **A.FO.06.04:** Distinguish between an algebraic expression and an equation.

Identify an equation.

A expression

B expression

C expression

D correct

18 **A.FO.06.04:** Distinguish between an algebraic expression and an equation.

Identify an expression.

A equation

B inequality

C correct

D inequality

19 **A.FO.06.11:** Relate simple linear equations to contexts; solve.

Solve for the variable in the multiplication sentence.

A correct

B 1 over

C subtracted coefficient from product

D added coefficient to product

20 **A.FO.06.11:** Relate simple linear equations to contexts; solve.

Solve for the variable in the subtraction sentence.

A 30 under

B 20 under

C 10 under

D correct

21 **A.FO.06.12:** Add and subtract numbers on both sides of equations.

Find the number that should be added to both sides of $ax - b = c$.

A $-c$

B $-b$

C correct

D c

22 **A.FO.06.12:** Add and subtract numbers on both sides of equations.

Given an equation, find the equivalent equation.

A correct

B $ax + b = c$ equivalent to $ax = b + c$

C $ax + b = c$ equivalent to $(a + b)x = c$

D $ax + b = c$ equivalent to $(a + b)x = c + b$

23 **A.FO.06.13:** Multiply and divide numbers on both sides of equations.

Given an equation, find the equivalent equation.

A correct

B $x = a$ equivalent to $x + b = b \times a$

C $x = a$ equivalent to $x + c = a - c$

D $x = a$ equivalent to $dx = a + d$

24 **A.FO.06.13:** Multiply and divide numbers on both sides of equations.

Identify the step needed to solve $ax = b$.

A add a to ax and to b

B subtract a from ax and from b

C multiply ax by a, and b by a

D correct

25 **M.PS.06.02:** Draw patterns for rectangular prisms.

Identify the net of a cube.

A 6 faces, but not net of a cube

B 6 faces, but not net of a cube

C correct

D 6 faces, but not net of a cube

26 **M.PS.06.02:** Draw patterns for rectangular prisms.

Given the net of a rectangular prism, identify the name of the solid.

A incorrect solid

B incorrect solid

C correct

D incorrect solid

27 **N.ME.06.11:** Find equivalent ratios by scaling up or down.

Find the equivalent ratios by scaling up.

A differences between denominators, numerators are same

B differences between denominators, numerators are same

C correct

D non-equivalent ratio

28 **N.ME.06.11:** Find equivalent ratios by scaling up or down.

Select the operation needed to reduce a fraction to its lowest terms.

A correct

B incorrect operation

C incorrect operation

D incorrect operation

29 **N.FL.06.14:** Estimate answers with rational numbers in context.

Estimate the cost in dollars of three novels.

A estimated cost of 1/3 of a novel

B estimated cost of 1 novel

C estimated cost of 2 novels

D correct

30 **N.FL.06.14:** Estimate answers with rational numbers in context.

Estimate the number of cups needed for a recipe.

A underestimate: number of recipes ÷ reciprocal of cup size

B correct

C overestimate: appended measuring cup size to number of recipes

D overestimate: reciprocal of cup size × number of recipes

31 **N.FL.06.15:** Solve applied problems with appropriate decimals.

Calculate the money amount remaining after buying three CDs.

A correct

B money remaining after buying two CDs

C money remaining after buying one CD

D money remaining after buying one CD + $1

32 **N.FL.06.15:** Solve applied problems with appropriate decimals.

Determine the brand with the least unit cost.

A least total cost

B intermediate total cost and size

C correct

D greatest total cost and greatest size

33 **A.PA.06.01:** Solve applied problems using rates.

Given the texting rate and time, find the total number of words.

A divided instead of multiplied

B number of minutes

C correct

D number of words for twice the time given

34 **A.PA.06.01:** Solve applied problems using rates.

Given the rate, determine the number of hours needed to sell a given amount of tickets.

A total amount of tickets ÷ number of tickets in given rate

B answer from A + number of hours in given rate

C incorrect number of hours

D correct

35 **A.FO.06.06:** Represent words using algebraic equations.

Identify the equation that represents money saved over time.

A correct

B transposed variables

C added instead of multiplied

D added instead of multiplied

36 **A.FO.06.06:** Represent words using algebraic equations.

Identify the expression that represents the number of a girl's fish.

A $ax - b = b - ax$

B $ax - b = a - bx$

C $ax - b = bx - a$

D correct

37 **M.TE.06.03:** Compute the volume and surface area of rectangular prisms.

Calculate the volume of a cube, given the edge length and formula.

A edge length × 3

B correct

C 3 to the power of the edge length

D measure of surface area

38 **M.TE.06.03:** Compute the volume and surface area of rectangular prisms.

Calculate the surface area of a cube, given the edge length and formula.

A surface area of one face

B 6 × edge length

C surface area of 5 faces

D correct

39 **A.FO.06.05:** Use conventions for writing algebraic expressions.

Translate words into an algebraic expression.

A incorrect expression

B switched coefficient and constant

C correct

D incorrect expression

40 **A.FO.06.07:** Simplify linear expressions and evaluate using values.

Evaluate an expression, given the values of x and y.

A used value of y throughout expression

B correct

C transposed x and y values

D used value of x throughout expression

41 **A.FO.06.14:** Solve equations of the form $ax + b = c$.

Solve the linear equation.

A correct

B added b to c, instead of subtracted

C c – a – b

D c

42 **A.PA.06.09:** Graph and write linear equations of the form $y = mx$.

Determine the number of cards purchased, given the equation.

A correct

B used incorrect total cost

C used incorrect total cost

D transposed variables

43 **A.RP.06.02:** Plot ordered pairs of integers.

Given an ordered pair, locate the point on a coordinate grid.

A (x, -y)

B (-y, x)

C (y, x)

D correct

44 **A.RP.06.08:** Know that graphs and tables can suggest relationships.

Interpret a pictograph with a scale of 10.

A incorrect total (wrong month)

B incorrect total

C correct

D incorrect total

45 **A.RP.06.10:** Represent simple relationships between quantities.

Interpret a line graph representing a relationship between distances.

A incorrect measures

B incorrect measures

C correct

D incorrect measures

46 **D.PR.06.01:** Express probabilities as fractions, decimals, or percents.

Calculate the probability as a decimal.

A probability of drawing one element, not in given range

B probability of complement

C incorrect probability

D correct

47 **D.PR.06.02:** Compute the probabilities of events from experiments.

Compute the probability of drawing a colored marble from a jar.

A 1/number of desired color

B correct

C 1/number of different colors

D number of marble desired/number of other marbles

48 **G.GS.06.01:** Know the properties of lines, angles, and triangles.

Identify the congruent angles if two parallel lines are cut by a transversal.

A supplementary angles

B same-side interior angles

C same-side interior angles

D correct

49 **G.GS.06.02:** Know congruence for polygon sides and angles.

Given a diagram of two congruent triangles, select the corresponding side.

A non-corresponding side

B side on same triangle

C correct

D non-corresponding side

50 **G.TR.06.03:** Know rigid motions in planes, relate them to congruence.

Given two diagrams, identify the size and direction of the rotation.

A correct

B correct size but incorrect direction

C incorrect size, incorrect direction

D incorrect size, incorrect direction

51 **G.TR.06.04:** Use simple compositions of rigid transformations.

Reflect and translate a rectangle on a coordinate grid.

A correct

B incorrect axis on reflection, incorrect direction on slide

C first transformation but not second

D incorrect axis on reflection, no second transformation

52 **M.UN.06.01:** Convert measurements within a single system.

Convert days into minutes.

A used 100 minutes = 1 hour

B correct

C used 30 minutes = 1 hour

D used 24 minutes = 1 hour

53 **N.ME.06.05:** Order rational numbers and place them on a number line.

Order the fractions from greatest to least.

A mixed order

B mixed order: numerators from greatest to least

C correct

D least to greatest

54 **N.ME.06.06:** Show rationals as fractions or terminating decimals.

Translate the terminating decimal to a fraction.

A 0.abc = a/bc

B correct

C twice the correct value

D incorrect numerator, correct denominator

55 **N.ME.06.07:** Know that a fraction is a quotient of two integers.

Translate the division expression to a fraction.

A $-a \div b = -b/a$

B correct

C $-a \div b = a/b$

D $-a \div b = b/a$

56 **N.ME.06.16:** Know integer exponents; use scientific notation.

Convert a number given in standard notation to scientific notation.

A additive inverse of sign on exponent

B incorrect exponent

C correct

D incorrect exponent: over by a factor of 10

57 **N.ME.06.17:** Locate negative rational numbers on a number line.

Given a value, locate the point on a number line.

A correct

B went to right of whole number for decimal portion

C absolute value and counted right to left from nearest whole

D absolute value

58 **N.ME.06.18** Know that rational numbers are quotient of integers.

Identify the rational number.

A irrational number

B correct

C irrational number

D irrational number

59 **N.ME.06.19:** Know zero is an integer that is neither negative nor positive.

Determine the number of negative integers on the list.

A incorrect total

B correct

C incorrect total

D incorrect total

60 **N.ME.06.20:** Know the absolute value of a number.

Know the absolute value of a number.

A $|-a| = -a$

B $|-a| = -1/a$

C $|-a| = 1/a$

D correct

61 **N.MR.06.08:** Know subtraction as the inverse of addition.

Add two integers.

A correct

B $a + (-b) = b - a$

C $a + (-b) = -a + (-b)$

D $a + (-b) = -b + (-a)$

62 **N.MR.06.13:** Solve word problems involving percentage, e.g., tips, tax.

Calculate the amount of dinner plus 15 percent tip, split evenly two ways.

A amount of tip

B half of dinner amount, not including tip

C correct

D dinner + tip amount, but not split

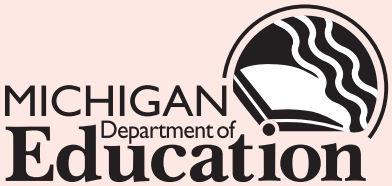
4th

5th

6th

7th

8th



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